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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/814,618	03/22/2001	Alain Coulombe	9555.112US01	3957

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CANADA

EXAMINER

COUSO, YON JUNG

ART UNIT PAPER NUMBER

2625

DATE MAILED: 05/28/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/814,618

Applicant(s)

COULOMBE ET AL.

Examiner

Yon Couso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-23 is/are allowed.
- 6) ☒ Claim(s) 1,2,11,14 and 24 is/are rejected.
- 7) ☒ Claim(s) 3-10,12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 11, 14, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Moser et al.

As to claim 1, Moser teaches a three-dimensional image grabber comprising: a pattern projecting assembly for simultaneously projecting at least two phase-shifted patterns onto an object (column 8, lines 24-30); each of said projected patterns being characterized by a predetermined bandwidth (column 8, lines 24-26); and an image acquisition apparatus sensitive to said predetermined bandwidths for simultaneously taking an image of each of said projected patterns on the object (580 in figure 5).

As to claim 2, Moser teaches at least one of said predetermined bandwidth includes a single wavelength (column 12, lines 30-31).

As to claim 11, Moser teaches that the image acquisition apparatus includes at least one camera sensitive to said predetermined bandwidth (column 11, lines 44-49, column 12, lines 30-31, and 580 in figure 5).

As to claim 14, Moser teaches that the camera is selected from the group consisting of a Charge Coupled Device (CCD) camera and a Complementary Metal-Oxide-Silicon (CMOS) device (column 11, lines 44-49).

As to claim 24, Moser teaches a three-dimensional image grabber comprising: a means for simultaneously projecting at least two phase-shifted patterns onto the object

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(column 8, lines 24-30); each of said projected patterns being characterized by a predetermined bandwidth (column 8, lines 24-26); and a means for simultaneously taking an image of each of said projected patterns on the object, said image taking means being sensitive to said predetermined bandwidths (580 in figure 5).

2. Claims 3-10, 12, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. Claims 15-23 are allowed.

4. The following is an examiner's statement of reasons for allowance: prior art fails to teach a system and a method for measuring the relief of an object, said system comprising: a pattern projecting assembly for simultaneously projecting at least three phase-shifted patterns onto the object; each of said projected patterns being characterized by a predetermined bandwidth; an image acquisition apparatus sensitive to said predetermined bandwidths for taking an image of each of said at least three phase-shifted projected patterns on the object; each of said images including a plurality of pixels having intensity values; and a controller configured for: a) receiving from the image acquisition apparatus said at least three images of the projected patterns onto the object; b) computing the object phase for each pixel using the at least three object intensity values for the corresponding pixel; and c) computing the relief of the object at each pixel position using said object phase at the corresponding pixel position.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Svetkoff et al is also cited.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (703) 305-4779. The examiner can normally be reached on 8:30 am –5:00 pm from Monday to Friday

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.


YON J. COUSO
PRIMARY EXAMINER

Yjc

May 24, 2004